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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,160	09/22/2005	Matthew J. Thiele	20020026	7511
22500	7590	03/26/2009	EXAMINER	
BAE SYSTEMS PO BOX 868 NASHUA, NH 03061-0868			JUNG, MIN	
ART UNIT	PAPER NUMBER			
	2416			
MAIL DATE	DELIVERY MODE			
03/26/2009	PAPER			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/530,160	<b>Applicant(s)</b> THIELE ET AL.
	<b>Examiner</b> Min Jung	<b>Art Unit</b> 2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 11 March 2009.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-18 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)

Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, preamble, it is not clear "what" is actually claimed to comprise the reconfigurable interconnect layer recited in the body of the claim. Is the claim directed to a "system", a "reconfigurable compute engine", a "system comprising a plurality of compute engines", an "interconnect fabric", or something else? The preamble is tangled, and therefore, unclear in meaning.

In claims 2-13, the claims recite "the interconnect fabric of claim 1" whereas claim 1 is actually recited "In a system.....". Therefore, it is unclear whether the dependant claims are meant to depend from the whole or a part of what is recited in claim 1.

Claim 14 is recited as a method claim while depending from an apparatus claim. A correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5 and 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Marshall et al., US 2004/0148069 (Marshall).

Marshall discloses a reconfigurable digital processing system for space.

Specifically regarding claim 1 of the present invention, Marshall teaches: In a system in which reconfigurable compute engines have input and output pins (input 132, and output 134, or the input and output lines shown to interconnect the plurality of FPGAs shown in Fig. 3 and Fig. 7) and are interconnected to perform a predetermined function and in which each of the reconfigurable compute engine includes an application layer (communications application 50), a physical layer (FPGA 30 shown in Fig. 2 or FPGAs 158, 160, and 162 shown in Fig. 7), and an interconnect fabric (interface 52 shown in Fig. 2 or bus interface 152 and control 154 and the rest of the circuitry shown to the left of FPGAs shown in Fig. 7), comprising: a reconfigurable interconnect layer between the application layer and the physical layer, the interconnect layer being reprogrammed for defining a new function for the compute engine by redefining interconnects without reconfiguring the physical layer and thus without affecting the application layer and regardless of what is happening in the application layer (to reconfigure the FPGAs, one

or more busses 60 are provided which provides configuration instructions as well as timing, along with low speed data for inputting and outputting data, see [0039]. Also see Fig. 4 and [0042] for an example concept of reconfiguring a given FPGA array by reprogramming to convert its function from filtering function to histogram generating function.).

Regarding claims 2-4, Marshall teaches pairs of pins being complementary, having complementary pins, and the complementary pins including pins having transmitting and receiving functions respectively (See Fig. 3 and Fig. 7 where a plurality of FPGAs each of which are connected to at least another FPGA by pins (inherent) having transmitting and receiving functions are shown).

Regarding claim 5, Marshall teaches transmitting timing signals between the FPGAs (shadowing technique to provide synchronization [0040] and [0045]).

Regarding claim 14, Marshall teaches FPGA (Fig. 3).

Regarding claims 15-17, the method recited loosely correspond to the apparatus recited in claims 1-3. Therefore, Marshall teaches the claims in the same manner as addressed above.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall.

Regarding claim 6, Marshall fails to teach that the timing signals include a strobe. However, a strobe is just an electrical pulse to indicate transfer of information, and can be utilized in any electrical communication environment. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize a strobe to indicate timing in implementing the system of Marshall.

Regarding claims 7-9 and 18, Marshall fails to teach that the different pins support the transmission of packet switched signals, the transmission of circuit switched signals, and discrete signal level transmissions, respectively. However, transmission of packet switched signals, circuit switched signals or discrete signal level transmissions are all well known modes of transmissions, and thus, any of these modes can be readily utilized to support different types of data. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement the teaching of Marshall by adopting different modes of transmission since such implementation does not make variation in the core of the inventive concept, but simply utilizes widely used transmission modes.

Regarding claims 10-13, Marshall fails to teach that the predetermine function includes spatial processing, communications, signal intelligence, and jamming. As shown by Fig. 1, these recited functions each specify different type of interconnection and communication among the computing engines. Marshall teaches one type of function and communication among the FPGAs, and reconfiguring to perform different

type of function and communication among the FPGAs. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to implement the teaching of Marshall to provide various types of functions and communication among the FPGAs including the types shown in Fig.1 since specific connections can be readily realized with Marshall's teaching of reconfiguration.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Huppenthal et al. PG Pub. And Osann, Jr. PG Pub., are cited for further references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Min Jung whose telephone number is 571-272-3127. The examiner can normally be reached on Monday through Friday 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Min Jung/  
Primary Examiner, Art Unit 2416